

UCR

Mathematics

Department

Special Colloquium in Applied Math

SPEAKER: DR. STEVEN BUTLER OF UC LOS ANGELES

“Hat Guessing Games and Orienting Hypercubes”

Abstract:

In a hat guessing game, n players have one of two types of hats placed on their heads. Based on what they see on the other players they then all guess (simultaneously and without communication) what type of hat they are wearing. Before players begin they are allowed to form a strategy in how the players will guess, usually with a specific goal in the outcome. For example, forming a strategy where the number of correct guesses will be a and or b . It is easy to show that a necessary condition for this is that there are nonnegative integers s and t so that $s+t=2^n$ and $as+bt=n^{n-1}$. We show that the necessary conditions are also sufficient by translating the problem into an orientation of the edges of the hypercube so that each vertex has indegree a or b and showing how to find such an orientation.

Wednesday, February 16th, 2011

Surge Building, Room 284

Tea, Coffee and Cookies @ 3:40pm

Talk begins @ 4:00pm - Ends @ 5:00pm

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